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ABSTRACT

This short booklet contains questions and answers concerning aspects of vocational-technical education, including (1) information needed when curriculum for a new occupation is initiated, (2) importance of cooperating with business and industry in program development, (3) making education responsive to emerging job requirements, and (4) examples of new occupations. The publications from which these answers were drawn review and synthesize research in the field. Information on them and how to order them is included. Related documents are available as VT 014 333 and VT 014 334 in this issue. (SB)

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Answers to Questions on Vocational Education

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Curriculum Planning --
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Questions and Answers

WHAT INFORMATION IS NEEDED BY THE TEACHER WHEN A CURRICULUM IS INITIATED FOR A NEW OCCUPATION?

Instructional packages should be prepared which include a curriculum guide, instructional materials, equipment list and specifications, supplies, budgets, a bibliography, and current reference materials. In the preparation of these materials, consideration should be given to the use of a variety of media. Performance objectives should be specified for the educational program. These objectives would help in determining the degree to which the student has achieved skills and knowledge necessary for entry into, and performance in an occupation.

WHY IS IT SO IMPORTANT TO COOPERATE WITH BUSINESS AND INDUSTRY IN DEVELOPING VOCATIONAL EDUCATION PROGRAMS?

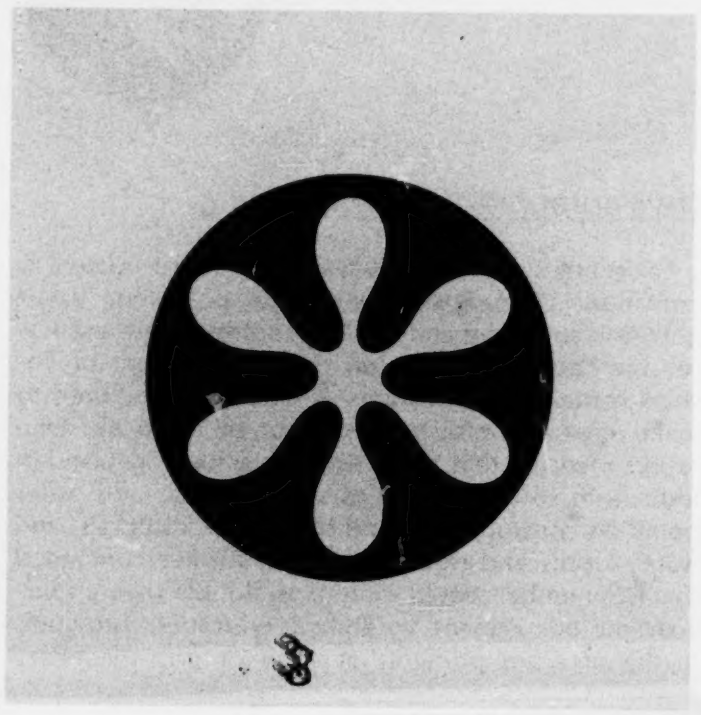
No educational system can supply the relevant level of skills and competence required without receiving active feedback and support from persons associated with the related occupations. Placement of graduates is enhanced when the program is in tune with the needs of business and industry for trained personnel.

HOW CAN EDUCATION BE RESPONSIVE TO EMERGING JOB REQUIREMENTS?

When normal training patterns are outdated by new processes, industry relies upon on-the-job training. The innovation is demonstrated to the operator who then perfects the requisite skills while performing the job. Communication must be established and maintained between education and the business and industrial community. Educators may analyze a new job during the early stages of job development so that a curriculum may be designed. It is doubtful if such analysis can be completed until the job has actually been established.

WHAT CURRICULUM MATERIALS ARE AVAILABLE FOR THE METALWORKING OCCUPATIONS?

Curriculum materials are generally available for the areas of machine trades, welding, and sheet metal instruction. There is a strong need for curriculum materials and guidelines in the tool and dye making, metallurgical, and foundry-casting trades. The lack of available materials in certain areas and levels may be due to the low demand on the public school sector to provide training for these trades.

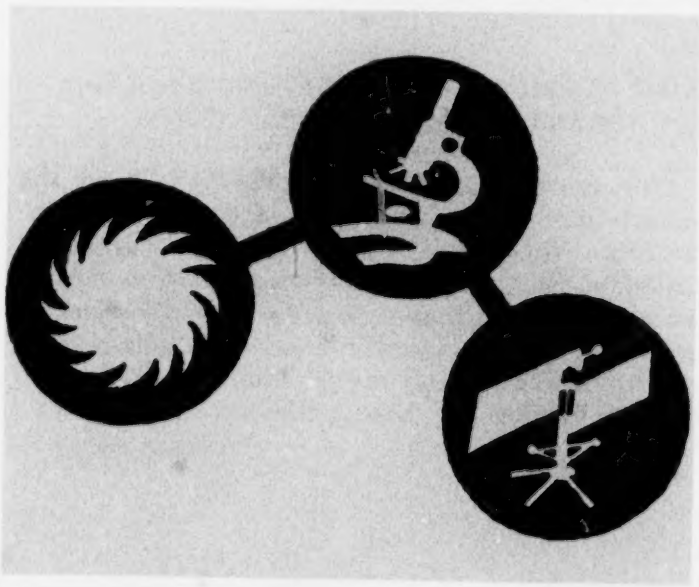


WHAT ARE SOME NEW, EMERGING, AND GROWTH OCCUPATIONS?

Public Services

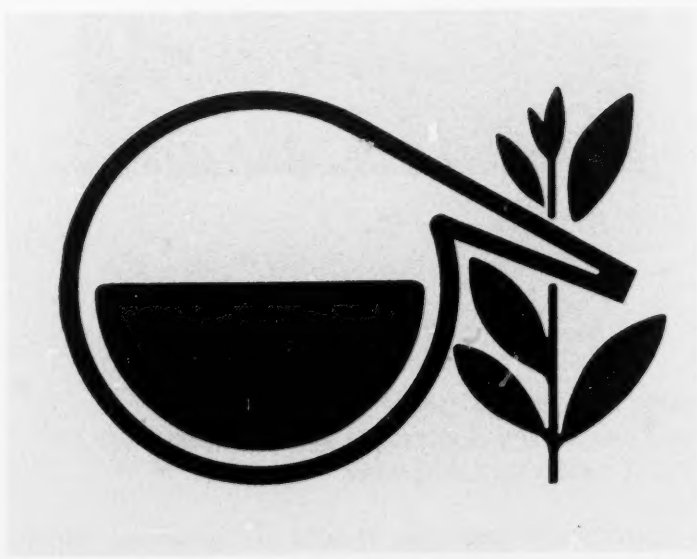
Major growth occupations in public services include social work, teacher aides, firefighting, and police work. Redefinition of occupations in social work should result in expanded opportunities for individuals trained at the paraprofessional levels; in fact, one source estimates 500 to 1,000 job openings annually in the 1970's in each major metropolitan area.

Schools and universities appear to be expanding opportunities for paraprofessionals in education. During the 1970's an estimated 15,000 opportunities for employment will occur each year for qualified candidates to enter police work; in firefighting, approximately 10,000 openings are expected to arise each year.



Environmental Control

Environmental occupations include those related to sanitation, radiological health, air pollution, water pollution and noise and lighting control. There are few reliable figures available on the total number of environmental control workers which will be required to make needed improvements in our environment. One report revealed that 2,600 technicians were involved in Indiana in solving problems related to air and water pollution control, liquid and solid waste disposals, and water supply and resources. It was further concluded that this number would more than double over a four-year period. Present vocational education programs in this area are primarily at adult or post-secondary levels.



Food Processing and Distribution

Worker needs for the processing, marketing, or serving of foodstuffs during the 1970's have not been well defined. The demand for graduates of programs which supply workers for processing occupations still far exceeds the supply. The number of workers employed in the marketing area is also expected to increase. Data concerning personnel needs in the local employment area should be used in determining if there is a need for these programs rather than basing such decisions on national information alone. One problem in the food processing and distribution area has been the lack of vertical mobility for workers.

Construction

Construction workers may be broadly classified in structural, mechanical and finishing occupations. Estimates for the 1970's indicate annual openings for an anticipated 291,000 skilled construction workers. The primary sources of formal training, including the vocational education system, turned out only 68,000 students who had completed training programs in these occupations in 1967. Structural occupations are expected to show the greatest increase in need for trained workers followed by mechanical occupational and the finishing occupations. The majority of craftsmen learn their trades through apprenticeship programs or on-the-job training. Many semiskilled occupations exist which also require training.

Health

Estimates for the 1970's indicate annual openings for an anticipated 231,500 workers in health occupations. By 1975, over 2,000,000 persons will be nonprofessional health workers who could profit from properly planned vocational programs. Vertical worker mobility has been slow to develop in the health field. There is an attempt to develop career ladders and lattices and to improve coordination among programs.

Transportation

Occupations in transportation relate to air transport, motor vehicles, pipelines, railroads, and water transport. Estimates indicate annual openings for approximately 300,000 workers in transportation occupations. Sources of formal training for individuals who will fill many of the more unique positions are often limited or nonexistent. However, training programs for some occupational areas in transportation, such as those in maritime occupations, appear to be adequate for the present.

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ORDERING INFORMATION

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